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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/664,659

09/17/2003

Tsuyoshi Maruyama

03454/LH

4627

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7590

10/01/2004

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EXAMINER

NGUYEN, THINH T

ART UNIT

PAPER NUMBER

2818

DATE MAILED: 10/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/664,659

**Applicant(s)**

MARUYAMA ET AL.

**Examiner**

Thinh T Nguyen

**Art Unit**

2818

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-19 are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. Claims 1-19 are pending in the application.

### Claims Objections.

2. Claim 11 is objected to as being a redundant claim of claim 8 **since it has the same exact recitation word by word of claim 8.**

Correction is required.

3. Claim 16 is objected to as being a redundant claim of claim 13 since the recitation of the limitation **“when the current flows” does not make the limitations of claim 16 different from that the limitations already recited in claim 13.**

**Correction or clarification is required.**

### Election/ Restriction

4. Claims 1-19 directed to semiconductor light emitting device are restricted as follows:  
The claims are directed to the following patently distinct species of the claimed invention:

**I/ Species I.**

Art Unit: 2818

As best as can be understood is described in claim 1 is directed to a semiconductor light emitting device comprising: a support substrate made of a first semiconductor material, and the second and third semiconductor materials and a thickness of the quantum well layer satisfy a condition that a difference of 100 meV or larger exists between an energy level of the carrier confinement layers at a conduction band lower end and a ground level of an electron in the quantum well layer;

#### **II/ Species II.**

As best as can be understood is described in claim 3 is directed to a semiconductor light emitting device comprising: a support substrate made of a first semiconductor material, and the second and third semiconductor materials and thicknesses of the quantum well layer and the carrier confinement layers satisfy a condition that light emission recombination of electrons and holes occurs in the quantum well layer and light emission recombination does not occur in the carrier confinement layers when current flows through the light emitting lamination structure.

#### **III/ Species III.**

As best as can be understood is described in claim 8 is directed to a semiconductor light emitting device comprising: a support substrate made of group III-V compound semiconductor and having a principal surface that is a (100) plane or a crystalline plane having an inclination angle of 2 degree or smaller from the (100) plane; the materials of the quantum well layer and the carrier confinement layers and a thickness of the quantum well layer satisfy a condition that a difference of 100 meV or larger exists between an energy level of the carrier confinement layers at a conduction band lower end and a ground level of an electron in the quantum well layer

#### **IV/ Species IV.**

Art Unit: 2818

As best as can be understood is described in claim 13 is directed to a semiconductor light emitting device comprising: a support substrate made of group III-V compound semiconductor and having a principal surface that is a (100) plane or a crystalline plane having an inclination angle of 2 degree or smaller from the (100) plane; the materials of the quantum well layer and the carrier confinement layers and thicknesses of the quantum well layer and the carrier confinement layers satisfy a condition that light emission recombination of electrons and holes occurs in the quantum well layer and light emission recombination does not occur in the carrier confinement layers.

**V/ Species V.**

As best as can be understood is described in claim 18 is directed to a semiconductor light emitting device comprising: a support substrate made of group III-V compound semiconductor and having a principal surface that is a (100) plane or a crystalline plane having an inclination angle of 5 degree or smaller from the (100) plane; the materials of the quantum well layer and the carrier confinement layers and a thickness of the quantum well layer satisfy a condition that a difference of 100 meV or larger exists between an energy level of the carrier confinement layers at a conduction band lower end and a ground level of an electron in the quantum well layer.

**VI/ Species VI.**

As best as can be understood is described in claim 19 is directed to a semiconductor light emitting device comprising: a support substrate made of group III-V compound semiconductor and having a principal surface that is a (100) plane or a crystalline plane having an inclination angle of 5 degree or smaller from the (100) plane; the materials of the quantum well layer and the carrier confinement layers and thicknesses of the quantum well layer and the carrier

Art Unit: 2818

confinement layers satisfy a condition that light emission recombination of electrons and holes occurs in the quantum well layer and light emission recombination does not occur in the carrier confinement layers.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

Art Unit: 2818

5. Applicant is advised that the response to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

6. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a diligently filed petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(h).

### **CONCLUSION**


7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thinh T Nguyen whose telephone number is 571-272-1790.

The examiner can normally be reached on 9.00 AM 6.00 PM Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, DAVID NELMS can be reached on (571) 272-1787. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9319 for After Final communications.

Art Unit: 2818

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

**Thinh T Nguyen** 

Art Unit 2818

  
**David Nelms**  
**Supervisory Patent Examiner**  
**Technology Center 2800**